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#### ABSTRACT

This paper examines the place of technology in augmenting future teachers' conceptual awareness and professional skills, highlighting major assumptions about integrating technology into teacher preparation programs (e.g., students have some level of technological literacy prior to entering school, computers are basic necessities in today's schools, and technological literacy is a major skill that must be integrated in education). Other propositions that affect the educational process of students and teachers in technology settings include: incomplete teaching is vital for complete learning; adequate guidance promotes independent, lifelong learning; and effective learning involves inquiry, reflection, and discovery. As technological advances influence educational reform, teachers' roles are changing to meet new learners' needs. The paper examines shifting paradigms in schools resulting from technology and multimedia instruction. For example, education has shifted from passive learning to active engagement, teacher dependency to learner independence, and dissident education to confluent education. Embedded in confluent-based paradigms are several goals, including: developing critical literacy and global world views; understanding oneself by understanding others; and enhancing unity through diversity and multicultural literacy. Confluent techno-pedagogy includes; online multicultural strategies, activities, and tasks; multimedia modes of learning and teaching; and electronic interactive assessment and evaluation tasks. (SM)



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## Technology and Teacher Preparation: Towards a Humanistic Framework

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#### **Introduction**

Teacher education programs have always responded to various conditions affecting schools. Recently, one of the major forces that has influenced teacher preparation involves technological advances and their promising educational consequences. For that reason, state and national accreditation agencies have called for training prospective teachers to integrate technology and multimedia in their professional development and conceptual awareness. Furthermore, teacher education programs are expected to have a sound philosophical base for training teachers. This knowledge base is typically reflected in teacher education programs' missions, philosophies, and goals. Matching the needs of both and individuals and societies must be clearly articulated in these educational missions. Most importantly, a sound vision to implement various goals must be outlined.

Historically, humanistic psychology has largely determined various teacher education educational frameworks (DeCarvalho, 1991). It has also affected the way content is delivered in schools in terms of the complexity of the learners' needs and societal expectations. Thus, confluent education has evolved out of various contextual, social, cognitive, emotional, academic, and psychological demands that must me met in learning/teaching situations. Shapiro (1998) revisited this concept in terms of the wholeness at individual and societal levels. Consequently, with changing social trends and growing technological advances, it's imperative to examine the paradigm shift from traditional to future roles of teachers in schools.



Based on the confluent education model, this paper examines the place of technology in augmenting the conceptual awareness and professional skills needed for teachers of the future. It highlights the major assumptions about integrating technology in curriculum and instruction as well as teacher preparation. The discussion also explores the salient features of confluent education as a solid foundation for empowering teachers and students in the technologically advanced society.

#### **Underlying Assumptions**

There are several assumptions that underlie the discussion of technology integration in schools. Some of these assumptions are:

- Students bring some level of technological literacy prior to entering schools
- Access of information through technology doesn't necessarily mean knowledge acquisition
- Technology is a major force that has a profound impact on educational treatments
- Computers have become basic necessities such as books in today's schools
- Technological literacy is a major skill that needs to be integrated in schools
- Students bring packages of knowledge and skills based on their interaction with technology
- Technology-based tasks are didactic given their cognitive, technical, and affective appeal

In addition to these assumptions, it is worthwhile to illicit another set of propositions that affect the educational process of students and teachers in technological settings. These include:

- Incomplete teaching is vital for complete learning
- Controlled floundering is needed for learning to occur
- Adequate guidance promotes independent, life-long learning
- Effective learning involves inquiry, reflection and discovery



- Responsible teaching results in responsible learning
- Learning is a didactic process (i.e. affective and cognitive)
- Contexts of learning vary largely (social, cultural, physical, etc.)
- Learning tasks must balance minds-on/hands-on dichotomy

These philosophical underpinnings and propositions not only serve as guiding principles for promoting technology based practices, but also form the basis for teacher preparation in the digital age. As technological advances influence educational reform efforts and direction, teachers' roles have been revisited to meet the needs of learners as dictated by new demands (Sarason, 1993). This will be examined in terms of shifting paradigms in schools as a result of technology and multimedia instruction.

### **Shifting Paradigms**

Education has always been largely influenced by various traditional and non-traditional paradigms and schools of thought in human psychology and other sciences. Educational treatments have also been shaped and reshaped by sociopolitical conditions in schools. This is especially true when considering the best approach for preparing teachers and students. Ultimately, curriculum and instruction can be viewed from multiple perspectives, approaches, and practices based on various complex social phenomena.

As far as technology is concerned, various education programs have attempted to balance their practices within the growing technological advances and changing demographics. While the social environment plays a central role in determining how computers are used in today's classrooms (Labbo, Reinking & McKenna, 1999), technology has forced teacher educators to consider a more conducive paradigm to better prepare teachers and students. These contexts,



coupled with the complex needs of diverse learners, have become the determining factors in moving toward an alternative paragon for teacher education. Thus, technology seems to have affected the roles of teachers and learners to shift in many ways:

from

knowledge transmission

passive learning

teacher dependency

mono-dimension delivery

monocultural approach

personal reflection

captive audience

requirement meeting

low expectations

synchronic process

abstract content

risk dodging

independent skills

input consumer

dissident instruction

to

meaning creation

active engagement

learner independence

pluralistic modes

multicultural context

intrapersonal reasoning

empowered participants

knowledge seeking

high expectations

diachronic product

situational context

risk taking/making

skillful independence

output producer

confluent education

Education reform efforts seem to reflect these changing roles through implementing a set of standards and frameworks. For instance, national, regional, and state accreditation agencies have postulated a set of professional and content standards as they relate to teaching/learning outcomes. They have also required a set of performance based expectations to assess the theoretical and pedagogical validity of adopted conceptual frameworks. They also have required compliance with socially and technologically relevant standards and guidelines.



#### Towards a Technologically Responsive Framework

Confluent education has been viewed by many as a multidisciplinary and comprehensive approach that can provide multiple learning environments matching the social, cognitive, emotional, interpersonal, and linguistic needs of students (Brown, 1972; Caine & Caine, 1991; Cummins, 1989; DeMeulle & D'Emidio-Caston, 1996). Intrinsically, it seeks to strike a dynamic balance between cognitive and affective domains of education. In other words, confluent education examines the needs of the whole person and attempts to satisfy these needs through treatments that are emotionally, cognitively, physically, linguistically, academically, and culturally relevant.

Embedded in confluent-based paradigms are several goals for both learners and educators.

These goals include:

- Developing critical literacy and global world-views;
- Understanding one-self through the understanding of others;
- Utilizing one's full potential for academic, social, and educational growth;
- Promoting positive feelings and attitudes towards oneself and others;
- Providing balanced curriculum activities for both knowledge and skill development;
- Utilizing multi-media and technological tools to enhance learning outcomes;
- Following professional and content standards to maximize learning outcomes;
- Constructing meanings through social and intellectual discourse;
- Enhancing unity through diversity and multicultural literacy.

There are several dimensions of Confluent Education that represent various keenly related domains. The domains include social, interpersonal, and intrapersonal components--involving a



wide range of conditions and issues related to human experience in its holistic context (DeMeulle & D'Emidio-Caston, 1996).

In schools, multiple learning opportunities can be created through full engagement of all learners using technology. Confluent techno-pedagogy appeals to all learners and includes several strategies. Some of these are:

- Technology standard based learning and teaching practices
- On-line multicultural strategies, activities and tasks
- Multi-media modes of learning and teaching
- Differentiated affective and cognitive digital discourse
- Situational 'here and now' internet/intranet interactions
- Technology based and digital literacy tasks and lessons
- Electronic interactive assessment and evaluation tasks
- On-line inquisitive and reflective learning and teaching

#### Conclusion

Effective education is central to meeting the needs of the whole person and global society. The teacher is no longer a dictator of learning content to be rotely memorized, nor is the student a passive receiver of knowledge and skill. Rather, learning and teaching involve intelligent decisions and optimal opportunities that are made more exciting and challenging through computers. This is especially true in global settings where the basic premise of education is to attain the highest level of human understanding.

One may find the confluent framework appealing in the digital age. Learning in this sense is a mediated activity in which children interact intelligently with the world around them; this



includes relevant patterns embedded in their cognitive and social development.

Teachers of tomorrow need to bear in mind that the use of technology and confluent-based practices involves metacognition and meta-electronic knowledge and skill. At the same time, they also should recognize that the computer a means to an end rather than an end in itself; i.e. various forms of knowledge and skills can be enhanced via electronic literacy and engagement.



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